STUDIES OF TWO HUMPBACK WHALES, *MEGAPTERA NOVAEANGLIAE*, STRANDED AT FRASER ISLAND, QUEENSLAND

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In 1989 two Humpback Whales, *Megaptera novaeangliae*, stranded at Fraser Island, Queensland. One specimen was an 8.1m female yearling and the other a 4.2m male new-born calf. Skeletal material, soft tissue, baleen, blubber and external parasites were recovered. Histological examinations were made of tissues from the heart, lungs, liver, kidneys and frontal bone (calf only). The cause of death in the yearling was not determined whereas the calf probably died from shark attack. □ *Humpback Whale, Megaptera novaeangliae, strandings, Fraser Island, Queensland.*

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Although Humpback Whales migrate close to Southern Hemisphere continental shores (Dawbin, 1966), records of strandings are relatively uncommon (Bannister, 1989). Prior to 1989 the Queensland Museum (QM) had records of five strandings (Paterson, 1986) but the deposited material was fragmentary apart from a skull, the collection of which was described in detail by Welsby (1931).

Material recovered from two Humpback Whales stranded at Fraser Island (Fig. 1) in 1989 was a significant addition to the QM collection. The specimens are registered JM7302 and JM7303 in the Queensland Museum Mammal Department.

SPECIMEN DESCRIPTIONS

FEMALE YEARLING,

JM7302 was 8.1m long, indicating a yearling, and stranded during good weather conditions near Brown's Rocks (24°46'S, 153°16'E) on 3 July 1989. Eye-witness accounts indicated that the animal was alive in the surf-zone but dead when washed ashore. When examined on the day following stranding, the right dorsolateral aspect of the carcass was buried due to tidal action (Fig. 2). Apart from superficial shark bites on the flukes and caudal peduncle there was no external evidence of injury. Barnacles, *Coronula diadema* and *Conchoderma auritum*, were noted particularly on the protuberance beneath the chin and on the pectoral fins, flukes and genital aperture (Figs 3,4). The majority of *C. auritum* were attached to *C. diadema*. Cyamids were not identified. The head and baleen were removed and blubber samples taken. The gastro-intestinal tract was empty.

When the site was revisited on 2 September 1989 it was discovered that the carcass had been washed 7km further north during stormy weather and the majority of the cervical and lumbar vertebrae were lost.

MALE CALF,

JM7303 was 4.2m long and stranded at Moon Point (25°14'S, 153°00'E) on 17 October 1989. Eye-witness accounts indicated that a larger (adult) Humpback Whale was present in deep water adjacent to Moon Point earlier on the same day while a calf, presumably the subsequently stranded animal, was seen swimming steadily in shallow water close to the shore. The actual stranding was not witnessed. When discovered the animal was bleeding from a large right axillary wound and died soon after. The carcass was recovered some hours later, taken to Urangan on the mainland where it was frozen, and subsequently transported to the QM. It had suffered numerous shark bites including a large, although healing, ventral wound. The humerus and large severed vessels were evident in the base of the previously noted axillary wound (Fig. 5). There were 24 ventral grooves and no evidence of external parasites. The specimen was cast and moulded for permanent display in the Queensland Museum.

The larynx was removed for separate examination (Quayle, this memoir). The pleural and peritoneal cavities appeared normal. The prin-

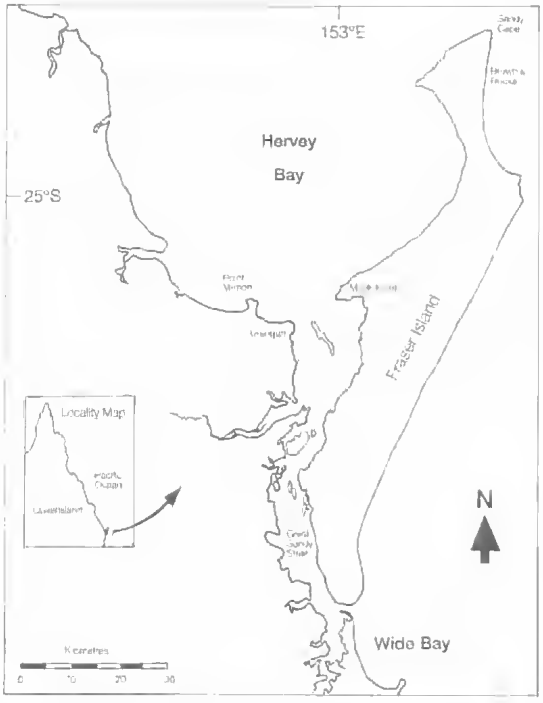

FIG. 1. Location of stranding sites on Fraser Island.

cipal gastric content was sand, possibly ingested during stranding. Faecal material was present in the intestines. Histological examination of the heart, lungs, liver and kidneys was normal apart from evidence of terminal pulmonary oedema.

There were 15 pairs of ribs and the vertebral formula was C7; T15; L11; Cd 18 = 51. Healing fractures involving the anterior aspects of the larger ribs were noted and the radiological findings (Fig. 6) suggest that the injuries had been sustained approximately four weeks previously. In addition a histologically confirmed post-traumatic pericranial reaction of similar duration to the rib fractures was noted on the superolateral aspect of the supraorbital process of the right frontal bone (Fig. 7). Similar pericranial injuries may occur in humans during birth and are termed cephalhaematomata (Caffey, 1973). There is no evidence that they are associated with mortality or persistent morbidity in humans and similarly the skeletal injuries suffered by JM7303 are considered to be unassociated with its death. While post-natal skeletal trauma is not entirely excluded there was no evidence of overlying cutaneous or subcutaneous injury.

FIG. 2. Partly buried carcass of JM7302 near Brown's Rocks.

FIG. 3. Barnacles, *Coronula diadema* and *Conchoderma auritum* on throat pleats of JM7302.

FIG. 4. Barnacles, *Coronula diadema* and *Conchoderma auritum* adjacent to the genital aperture of JM7302.

FIG. 5. Humpback Whale calf, JM7303, showing large right axillary wound.

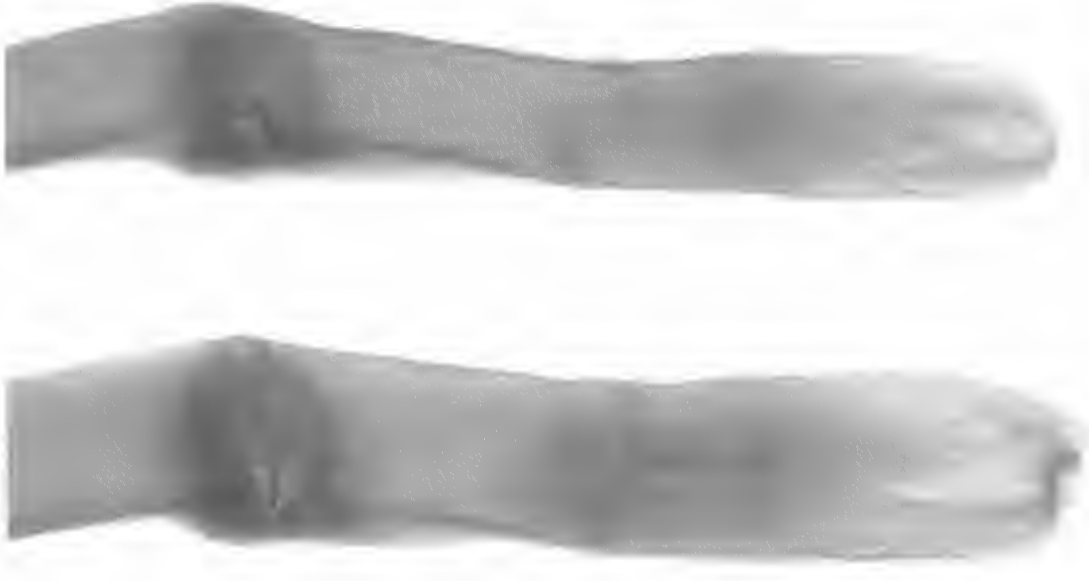

FIG. 6. Radiograph of anterior aspects of the left 8th and 9th ribs of JM7303 showing healing fractures.

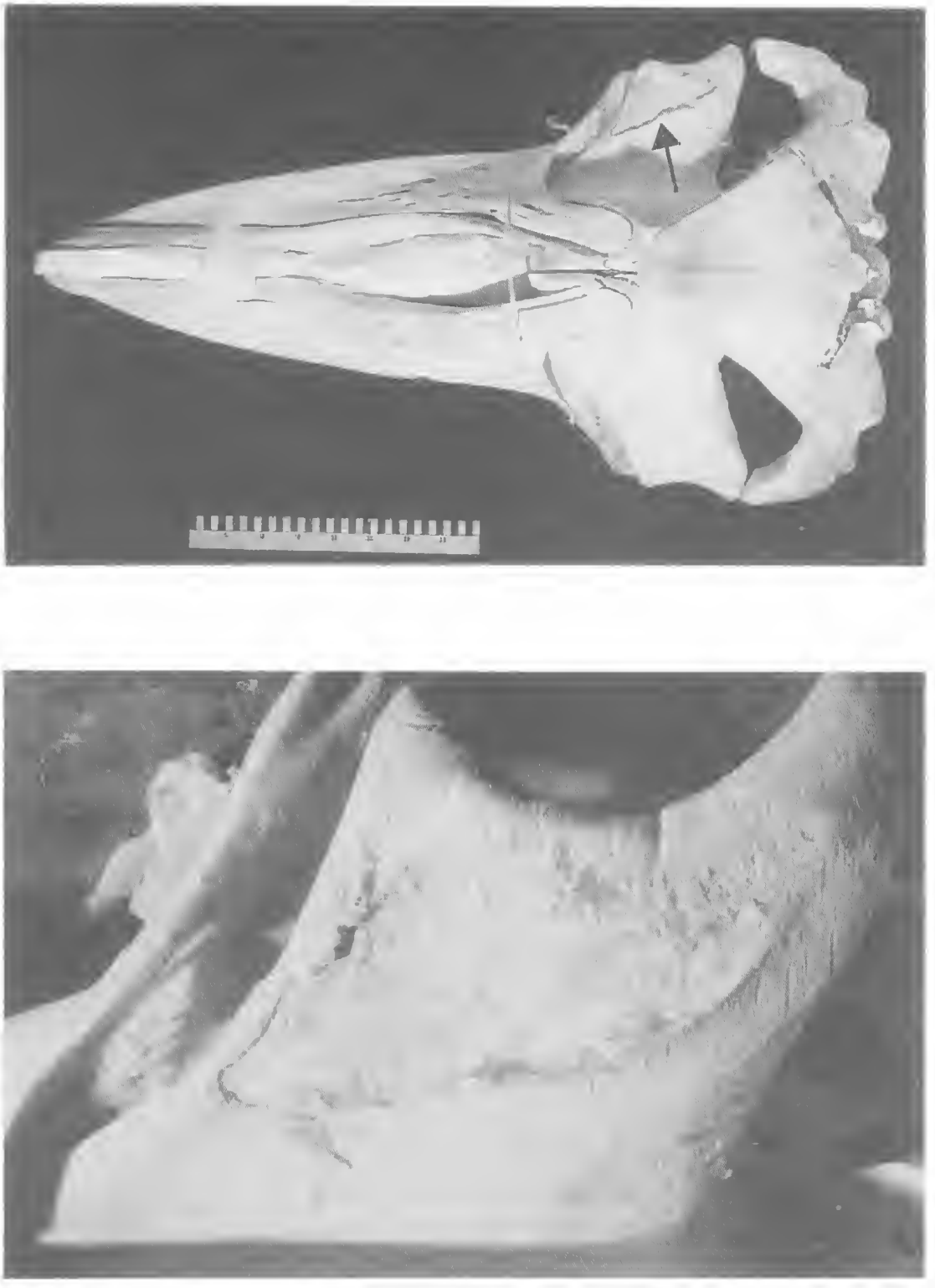

FIG. 7. Skull of JM7303 showing post-traumatic reaction to the supero-lateral aspect of the supra-orbital process of the right frontal bone.

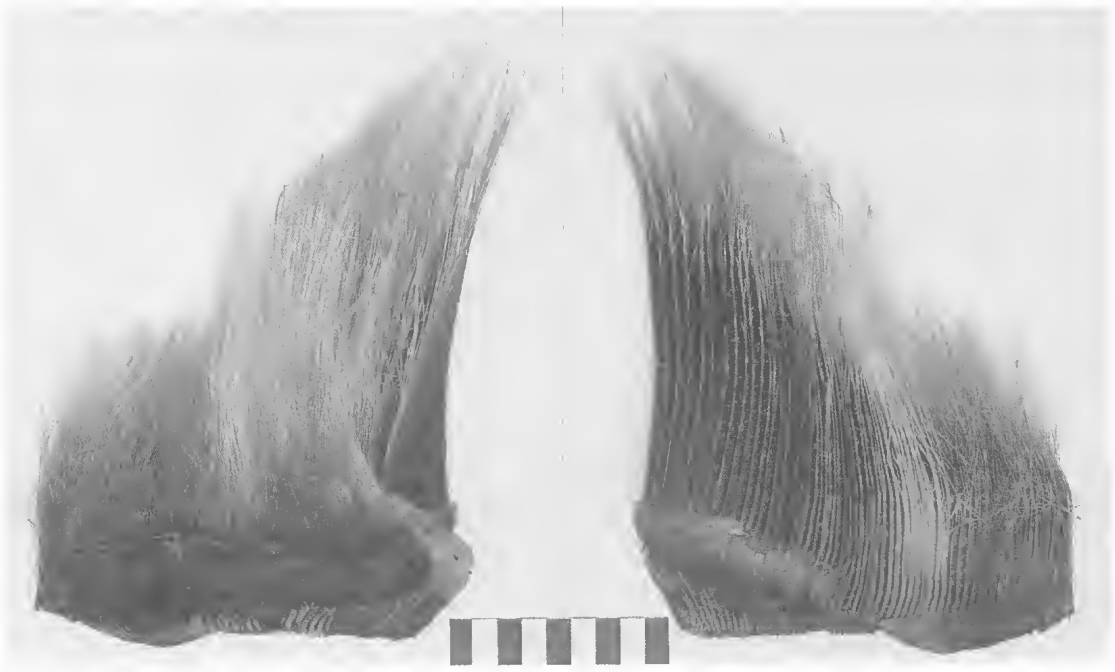

FIG. 8. Baleen of JM7302 showing band of white plates anteriorly.

BLUBBER

The mid-dorsal blubber thicknesses of JM7302 and JM7303 were 9.7cm and 4.5cm, respectively and are consistent with normal nutrition for Humpback Whales of those lengths (Matthews, 1937). It is assumed that JM7302 was northbound from the Antarctic and had been recently weaned. Accordingly its blubber would be thicker than that of JM7303 which was newborn and in the early stages of the southern migration.

BALEEN

The baleen bristles were greyish-white in both specimens. The plates were black with the exception of a few that were pale, almost white, anteriorly in JM7302 (Fig. 8). They numbered 342 and 310±5 on the left in JM7302 and JM7303 respectively (Figs 9,10). Doubt concerning the exact count in JM7303 resulted from the extremely small size of the anterior plates. The largest plates were 46cm and 9.5cm long in JM7302 and JM7303, respectively.

DISCUSSION

Given the large size of some cetaceans and the unpredictable nature of their stranding it is not surprising that recovery of useful biological material is often limited. The study of JM7302 typified those problems. Although first examined on the day following stranding, its location and available resources dictated the amount of material that could be recovered. The Queensland Museum was fortunate in the case of JM7303 in that prompt retrieval and freezing of the latter by a local fisherman provided a rare opportunity to examine and prepare an excellently preserved specimen.

Sheltered waters of the Great Barrier Reef are an important calving area for the east Australian Humpback Whale stock (Paterson and Paterson, 1984,1989; Simmons and Marsh,1986). Most Humpback Whales pass northwards along the southern Queensland coast between June and early August and pass southwards between late August and October. In the vicinity of Fraser Island they pass the eastern (oceanic) shore during both migrations but enter Hervey Bay on

FIG. 9. Lingual and buccal views of left baleen row of JM7303.

FIG. 10. Lingual and buccal views of right baleen row of JM7302.

the western shore in large numbers only during the southern migration (Paterson and Paterson, 1989). The location and timing of the strandings of JM7302 and JM7303 are consistent with those migration patterns.

ACKNOWLEDGEMENTS

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